



U.S. Department
of Transportation
**Federal Transit
Administration**

Memorandum

Subject: ACTION: Approval to Initiate Preliminary Engineering for the Denver-Gold Line Commuter Rail Project Date: APR 8 2009

From: Terry J. Rosapep Regional Administrator, TRO-8 Reply to Attn. of: David Beckhouse, TRO-8

To: Susan Borinsky Associate Administrator for Planning & Environment, TPE-1

Susan E. Schruth Associate Administrator for Program Management, TPM-1

Region 8 (TRO-8) is seeking TPE and TPM concurrence to approve the Gold Line commuter rail transit (Gold Line) project into Preliminary Engineering (PE). The Regional Transportation District of Denver (RTD) is the project sponsor. The Gold Line will be constructed as part of the larger RTD project known as the East and Gold Line Enterprise (Eagle Project) utilizing a design-build-finance-operate-maintain (DBFOM) project delivery method. A Concessionaire Team (CT) composed of engineering, construction, construction management, financial advisors and vehicle firms would design and construct the Eagle Project. The CT would also help to finance the project and have an equity stake. The CT, in cooperation with RTD, would operate the Gold Line project, through a 50 year concessionaire agreement.

Note: RTD intends to apply for approval of both entry into Final Design and a Full Funding Grant Agreement (FFGA) at the same time.

In January 2009, RTD issued a draft Request for Proposals for industry review. A CT team will be selected to enter into a DBFOM contract for the Eagle Project. A final RFP is scheduled for issuance in June 2009, with technical proposals due in November 2009 and final proposals including cost proposals due in February 2010. The preferred bidder will be selected in March 2010.

On September 5, 2008, RTD submitted a request to enter PE. FTA determined that the request was complete on January 16, 2009. RTD has met all FTA requirements outlined in the *New Starts Project Planning and Development Checklist of Project Sponsor Submittals to FTA to Enter PE* and is ready to initiate PE.

BACKGROUND

The Gold Line Study Area is situated to the west of downtown Denver and travels through the following municipalities: the City and County of Denver, Adams County, the City of Arvada, and the City of Wheat Ridge. The following major transportation facilities are located in the Study Area: running east to west are Interstate highways I-70 and I-76; running north to south is I-25. The major north to south arterials in the Study Area are Pecos, Federal, Sheridan, and Wadsworth Boulevards, and Ward Road, which are all State Highways. In 2030, the Gold Line Study Area population is expected to increase by 33%, bringing an additional 51,000 new residents to the Study Area. Future employment increases are similar with a forecasted 44% increase or about 55,000 additional jobs in the Study Area. There will also be a 54% increase in employment in the Denver Central Business District (CBD), resulting in an additional 56,000 new jobs.

Existing transit service in the southeastern portion of the Study Area is provided by frequent local and limited-stop buses using a grid street network extending from Denver CBD. Northern and western suburbs within the Study Area have a less well-connected, curvilinear street network. The northern and western suburbs are served by express service buses at two park and ride facilities, and a less frequent network of local buses. Peak period headways on the Express buses range from 15 to 30 minutes, with no off peak service. Average weekday ridership on these express buses combined in 2007 was approximately 1,000. The two park and ride facilities currently have a total of 691 parking spaces.

GOLD LINE STUDY AREA MOBILITY PROBLEMS

The primary trip attractor for trips originating in the Gold Line Study Area is downtown Denver. Current transit travel time from the Study Area to the CBD is impacted by the congested conditions on I-70 and I-25. Travel time by transit is currently 20 minutes by express bus on I-70 and I-25 from Ward Road to downtown Denver, however, this time can vary by as much as 8 minutes due to congestion. All other major east to west arterials do not provide, and are not planned to provide, direct connections into the CBD over the next 20 years.

Severe congestion on both arterial highways and Interstate highways (Level of Service F) in the Study Area is expected by 2030. It is anticipated that commuters will shift off I-25 and I-70 and begin to use the north/south arterials as an alternate route into the CBD, as there will be no more capacity on the major interstate highways. Travel time on I-70 and I-25 will increase from 20 minutes today to 27 minutes by 2030, an increase of 35% for both auto and bus transit travel.

HISTORY AND PLANNING CONTEXT

A brief history of the development of the Gold Line Corridor is listed below:

- A Major Investment Study (MIS) was initiated in 2000, a FasTracks Alternative Refinement Study in 2004, a Three Corridor Scoping Study in 2005, and was concluded in 2007 in the Gold Line Draft Environmental Impact Statement (Draft EIS) with the adoption of a Locally Preferred Alternative.
- The Gold Line is listed in the DRCOG Fiscally Constrained 2035 Metro Vision Regional Transportation Plan (RTP), adopted in December 2007. The Gold Line is listed in the 2008-2013 Transportation Improvement Program (TIP), adopted in March 2008.

- In November 2004, voters approved the \$4.7 billion, 12-year FasTracks plan and tax increase to expand rail and bus service throughout the RTD service area.
- In July 2007, FTA informed RTD that the Denver East and Gold Line corridors were selected to participate in the Public Private Partnership Pilot Program (Penta-P) program.
- In December 2007, FTA and RTD signed a Memorandum of Understanding outlining procedural and rating benefits that may be applied to the East and Gold Line New Starts projects under the Penta-P program.
- A Draft Environmental Impact Statement (EIS) was issued in July 2008.
- A Final EIS is anticipated in June 2009.
- RTD currently anticipates requesting entry into final design and an FFGA at the same time.

EVALUATION OF ALTERNATIVES

The Alternatives Analysis for the Gold Line was developed from the I-70 Denver to Golden Major Investment Study (MIS), which was completed in 2000. A full range of multi-modal alternatives, technologies and alignments were considered in the MIS, including locomotive-hauled coaches, high-occupancy vehicle (HOV) highway improvements, bus rapid transit (BRT), personal rapid transit (PRT) services, light rail transit (LRT) and Commuter Rail (CR) Diesel Multiple Unit (DMU) technology. Seventeen alternatives were evaluated and were subject to three levels of screening. The MIS resulted in a Locally Preferred Alternative (LPA), which was known as Denver Union Station (DUS) to Golden Phase I, which extends from DUS to Ward Road along an existing railroad right of way. The LPA included seven stations and utilized LRT as the mode technology.

The LPA was refined in 2004 as part of the FasTracks Plan Alternative Refinement. The refinement included 11.2 miles of double track and 2,250 parking spaces. In 2005, the Three Corridor Scoping Study further refined the LPA. Significant changes to the LPA based on this work included: 1) shifting the proposed alignment further away from residential areas to operate within railroad right of way (ROW) to lessen community impacts; 2) relocating the proposed alignment on the north side of the existing Burlington Northern Santa Fe (BNSF) ROW in order to minimize potential impacts near Sheridan Boulevard and Miller Street; and 3) relocating the proposed Ward Road terminus north of the existing park and ride facility so that it is positioned adjacent to the existing BNSF ROW.

In 2006, a Gold Line EIS was initiated, which included further alternatives analysis of the Gold Line alignment. In addition to No Action and Transportation System Management (TSM) alternatives, Electric Multiple Unit (EMU) alternatives, DMU alternatives, LRT alternatives and Streetcar alternatives were considered in the DEIS. Most of the EMU and DMU alternatives utilized the existing railroad ROW for potential alignments. LRT alternatives used a combination of existing ROW and existing streets, while the Streetcar alternatives used existing streets for most of the alignment. In 2007, EMU was selected as part of a Locally Preferred Alternative for the Gold Line.

PROJECT DESCRIPTION

The proposed project is a 10.8-mile Commuter Rail line using EMU vehicles that will operate from Downtown Denver to Ward Road. The Gold Line project does not include the entire capital infrastructure investments currently needed to operate this commuter rail line. RTD is going to

rebuild DUS as part of a separate multimodal project to accommodate commuter rail service. In addition, the trackway between DUS and Pecos will be built by the Northwest Rail Corridor Project, which is anticipated to be constructed in advance of the completion of the Gold Line.

The Gold Line project cost includes: seven new stations; 2250 parking spaces; 22 EMU vehicles; electrification between DUS and Pecos; and a portion of a centralized Commuter Rail Maintenance Facility (CRMF).

Note: The capital cost estimate includes only the number of park and ride spaces needed in the opening year rather than those needed for 2030 (5,390 spaces). The financial plan includes in the out years the full number of spaces needed.

CURRENT STATUS, PROJECT COSTS AND ISSUES

Total capital costs for the Gold Line project are \$859.5 million in Year of Expenditure (YOE). A summary of project YOE costs are listed below:

FTA Standard Cost Category	Category Description	Estimated Cost YOE\$ (\$000)
10	Guideway and Track Elements	128,087
20	Stations, Stops, Terminals, Intermodal	72,987
30	Support Facilities: Yard, Shops, Administration	52,447
40	Sitework & Special Conditions	150,295
50	Systems	98,681
	Subtotal Construction Costs (YOE\$)	502,497
60	ROW, Land, Existing Improvements	* 85,943
70	Vehicles	106,574
80	Professional Services	63,308
90	Unallocated Contingency	82,027
100	Finance Charges *	19,158
	Total Direct Project Cost (YOE\$)	859,508
	Total Project Cost (YOE\$)	859,508
	Federal New Starts Share	242,000
	Local Share and Private Share	617,508

Pre-PE Cost, Scope and Schedule Review

A Pre-PE review was conducted by FTA's Project Management Oversight Contractor (PMOC) from October 2008 through January 2009. When the review started in October 2008, RTD had only begun to develop documents and requirements that would form the basis for their DBFOM delivery strategy, which is now commonly referred to as the *Concessionaire Agreement*. RTD's cost, scope, schedule, and management documents used as the basis for the PMOC review reflected different project delivery approaches than what may ultimately be used. The PMOC analyzed the most current documents available from RTD, which for the most part were based on

a typical Design-Build (D-B) approach. The PMOC did not review or consider the RTD Draft *Request for Proposals for the Eagle Project* (draft RFP), dated December 31, 2008.

The PMOC analysis identified the following:

- The capacity of the Commuter Rail Vehicles (CRV) and the proposed schedule of train operations are in accordance with standard industry practice.
- The engineering plans, with the exception of the CRMF, are greatly advanced for entry in to PE and are supported by design criteria and technical studies. They present a complete physical definition of the Gold Line project. RTD has identified the preferred design options based on the most likely outcome of railroad negotiations and used these as the basis for the cost estimate.
- The cost estimate presents considerable detailed information (for example, quantities and unit costs).
- The schedule evaluation indicates that the estimated Revenue Operations Date of June 2015 is achievable if the FFGA, Eagle Project procurement, ROW, and utility relocations are executed as anticipated.
- RTD has developed an Eagle Project Management Plan (PMP), Safety and Security Management Plan (SSMP), Real Estate Acquisition Management Plan (RAMP), Commuter Rail Fleet Maintenance Plan (CRFMP), Bus Fleet Management Plan (BFMP), and Eagle Quality Management Oversight Program Plan. These plans generally comply with FTA guidance and requirements for entry into PE.

The PMOC identified the following uncertainties:

- The PMOC's opinion of the most likely cost to complete the project in Year of Expenditure dollars is \$890,050,957 or \$30,542,957 (3.5 %) above the RTD's YOE estimate of \$859,508,000. The difference in base year dollars is much higher at \$73,321,901 or 13.11% when RTD's base year cost of \$552,502,000 is compared with the PMOC's estimate of \$623,823,901. This difference is reduced in YOE dollars to \$30,542,957 or 3.5% based on RTD's use of higher forecasted escalation rates.
- Purchase, construction, operating, and maintenance agreements should be executed as soon as possible with the Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe Railroad (BNSF) and other major stakeholders to minimize affects on the scope, schedule, and costs of the Eagle Project.
- There is a potential for interface conflicts and delays between multiple FasTracks and related projects. Specifically:
 - The 3.5 mile section of the Northwest Rail corridor between the DUS Throat and Pecos Street station.
 - The DUS with its new commuter line platforms and supporting infrastructure including the throat segment.
 - The location and scope of the CRMF.
- All of the corridors in the Eagle Project will be under Federal Railroad Administration (FRA) jurisdiction. RTD should include provisions for the concessionaire to comply with FRA requirements.
- The length of the single-track section may need to be shortened to allow for more reliable operation of 7.5-minute peak headways, possibly resulting in additional property acquisitions, utility conflicts, and environmental mitigations.

- The Eagle PMP should describe how Gold Line design, construction, and other project management activities and responsibilities relate and interface with other FasTracks Project activities such as DUS, as required for the Gold Line project to operate successfully.
- The results of the staff interviews indicate that RTD is understaffed in areas needed to implement the FasTracks Program, including the Gold Line project. The PMOC recommends that a construction phase staffing plan be developed and authorized by the General Manager (GM) prior to the submission of the next PMP.
- The schedule review indicates that project activities including engineering, third-party work, utilities, real estate acquisition, construction, and systems are all identified with aggressive durations, logic dependencies, and constraints which will require highly effective management by RTD in order to keep the project on schedule.
- A number of risks and uncertainties remain, primarily due to the stage of design and the information presented in the current ROW plan. During PE, RTD must address the concerns identified in the RAMP section of the Management Plan Analysis.

The PMOC is of the opinion that RTD has demonstrated sufficient progress to support entry into PE, with the understanding that the following recommendations need to be resolved during PE and prior to requesting entry into Final Design and an FFGA:

- Update the project budget to reflect all scope items and the agreed upon escalation rates.
- Provide design plans, estimates and schedule for the location and scope of the CRMF. The CRMF should be available in time for testing and preparing all CRVs assigned to the new facility. The CRMF will be used by the Gold Line and all of the rest of the RTD commuter rail lines in the system. Therefore, the CRMF should be constructed ahead of all of these proposed lines as a safeguard to prevent delays in opening any of these lines using this facility.
- Provide more detailed construction plans, agreements, and contract delineation responsibilities for work that is not part of the Gold Line project but is needed for the Gold Line to terminate at DUS.
- Identify all potential utilities affected and relocations needed along the Gold Line project corridor and for the CRMF.
- Identify a ROW budget by anticipated parcels needed, highlighting those parcels that need FTA appraisal concurrence.
- Complete and submit draft Railroad Agreements to FTA for prior concurrence.
- Update the project cost estimate and schedule to reflect contractor overhead and risks associated with the DBFOM procurement approach and a design level that incorporates accepted recommendations from a Value Engineering (VE) study or contractor proposed alternative technical concepts.
- Complete an updated Eagle PMP that includes new processes and procedures for the following:
 - FRA design and operations readiness reviews and concurrences
 - Coordination and interfaces with other projects (for example, DUS, Northwest Rail Corridor, North Metro, Amtrak and Ski Train)

- Coordination interfaces, and requirements associated with third parties (for example, Colorado Department of Transportation (CDOT), the City of Wheat Ridge, City of Arvada, and Adams County)
- Revise the BFMP to correct inconsistencies in the current plan; these include among other things the relationship between projected ridership and planned bus hours and restructuring of bus services.
- Revise the SSMP to address the entire corridor and CRMF rather than the scope of the Federal project. This document is to include completed Threat and Vulnerability Analysis (TVA) and FRA compliant Collision Hazard Analysis (CHA).
- Demonstrate that RTD has the staff and/or consultants with the technical capacity to complete this project and the other projects in the FasTracks program.
- Demonstrate through advance train operational simulations, based on reasonable train performance and associated variations such as dwell times and vehicle loading that the peak 7.5 minute headways through the Gold Line single track segment and throat segment into DUS are feasible.
- Demonstrate that vehicle and platform preliminary designs and design criteria comply with all the FRA and FTA level boarding guidance; especially the guidance related to commuter rail horizontal and vertical gaps between trains and platforms.

National Environmental Policy Act

A Notice of Intent was published on July 21, 2006. The DEIS was published on July 30, 2008. The public and agency comments received on the Draft EIS are currently being reviewed. The Final EIS is anticipated to be released in June 2009. A Record of Decision is anticipated in September 2009.

PROJECT READINESS/TECHNICAL CAPACITY

Conformance with Americans with Disabilities Act (ADA): RTD is cognizant of the requirements for conformance with ADA. RTD has provided preliminary documentation for level boarding design at all proposed Gold Line stations.

Project Management Plan: RTD has prepared an initial PMP. This document will be updated and amended as the project progresses to reflect the appropriate stage of engineering and design. FTA has reviewed the PMP and advised RTD of areas that need attention in a timely manner.

Technical Capacity: The PMOC reviewed RTD's technical capacity and readiness to enter PE. In the review, the PMOC concluded that:

- RTD should fill the 14 currently vacant positions and implement the staffing plan;
- RTD should fill current senior management vacancies or finalize permanent assignments and identify clear timelines for filling of remaining vacancies for middle management and technical positions;
- the vacant Real Property Project Manager position should be filled to enable staff to handle the increased workload and provide adequate oversight for the external appraisers; and
- the corridor Project Managers appear to be overstretched according to several of the interviews.

RTD has demonstrated sufficient progress in defining the Gold Line scope, cost, schedule, and technical capacity to support entry into PE with the understanding that there are many recommendations that must be addressed before entry into Final Design. RTD's Penta-P team is aggressively moving forward with a DBFOM RFP for the Gold Line and East Corridors. RTD has planned meetings with FTA to discuss those recommendations that are not being addressed as part of the RFP.

NEW STARTS RATING

Based on an evaluation of the project's New Starts criteria submittal, the project has received an overall project rating of Medium. The rating is based on a project justification rating of Medium and a local financial commitment rating of Medium. The project justification rating is based on a Medium rating for land use and a Medium rating for cost-effectiveness (\$22.83). As a benefit of being in the Penta P program, FTA has agreed to allow the private equity contribution to be excluded from the calculation of cost-effectiveness. Should the private equity contribution ultimately differ from that proposed, cost-effectiveness will need to be recalculated.

RTD is requesting \$242.0 million, in New Starts funds (28 percent). RTD is anticipating that \$507 million in private equity will be contributed to the project by the Concessionaire. The remaining non-New Starts funding will come from FasTracks sales tax revenues and bond proceeds and local government contributions.

The following documents have been received and reviewed for RTD's request for entry into PE:

- Eagle Project Management Plan (PMP), August 2008;
- New Starts submittal and letter requesting to enter PE, September 2008;
- Evidence that the Preferred Alternative is adopted in the local Metropolitan Planning Organization's (MPO) Regional Transportation Plan and meets all FTA/FHWA planning and programming requirements;
- Documentation of passenger level boarding design for all stations, September 2008;
- Updated New Starts Project Templates, December 2008; and
- New Starts Baseline Alternative Report, January 2009.

OTHER ISSUES

In addition to the recommendations identified by the PMOC above, RTD must complete the following activities during PE:

- Complete the National Environmental Policy Act (NEPA) review that requires the engineering, technical work, and interagency coordination necessary to support decisions on the scope of the Locally Preferred Alternative, evaluation and mitigation of adverse impacts, environmental permits and agreements, and responses to comments on draft NEPA documents.
- Resolve issues previously identified by FTA with the travel forecasting model. Any additional travel forecasts that are developed for the Gold Line project must adhere to FTA requirements, and reflect the transportation network assumed for the appropriate design year in the region's financially constrained long range plan.

- The Gold Line project assumes that the track from DUS to Pecos will be constructed as part of the Northwest Corridor non-Federal project in advance of the Gold Line project. Thus, this section of the Northwest Corridor project must be fully funded and advancing into construction before an FFGA will be signed for the Gold Line project.
- The Gold Line and other RTD commuter rail lines will be using a new CRMF that will be accessed through the DUS-Pecos segment of the Northwest Corridor and Gold Line. The CRMF must be available before the opening of Gold Line, East Corridor and Northwest Corridor. The CRMF must therefore be fully funded and advancing ahead of these commuter rail lines before an FFGA will be signed for the Gold Line project.
- If the private equity funding amount assumed in the PE application does not come to fruition upon receipt of proposals from concessionaires, the cost-effectiveness of the Gold Line project will need to be re-rated.
- Update FTA of the most current discussions regarding the FasTracks Financial Plan as it pertains to the development of the Eagle Project.

CONCLUSION

RTD has met all FTA planning requirements and is ready to initiate PE. FTA's approval letter (attached) will advise RTD of conditions for progressing through PE and of FTA's intent to further identify any additional milestones and conditions that must be met in order for the project to maintain PE status.

FTA will task RTD with solidifying the project's financial plan during PE and meeting other critical project development milestones that minimize project risks and provide sufficient information on the costs and merits of the project for use in subsequent New Starts evaluations.

If the milestones in the current schedule are achieved, revenue operations for the Gold Line could begin in 2015.

RECOMMENDATION

TRO-8, in cooperation with TPE and TPM, evaluated the Gold Line project according to the PE readiness criteria to ensure that all requirements have been met. The New Starts team reviewed RTD's PE request and found that it met all PE readiness requirements.

Therefore, TRO-8 concludes that all requirements relative to entering into PE have been met. We request TPE's and TPM's concurrence in our approval to permit the project to enter PE. Once we receive your concurrence we will formally advise RTD of FTA's approval to proceed (letter attached) with conditions.

Attachments (3)

PE Approval Letter

Congressional Notification

Project Scope, Schedule and Cost Review Report (PMOC Deliverable)

Concur: *Susan Borinsky* *4/6/09*
 Susan Borinsky,
 Associate Administrator for Planning
 and Environment
 Date

Concur: *Aaron C. Jansz* *4/8/09*
for Susan E. Schruth,
 Associate Administrator for Program
 Management
 Date